and consequently considers that it is nearly allied to the *Euphoniæ*. It is to be hoped that we shall know ere long which of these statements is correct. It would be also highly desirable to ascertain the structure of the stomach in the other genera placed near to *Euphonia*, particularly that of the genus *Procnias*. I propose on some future occasion to publish a supplementary list describing the condition of the stomach in any other forms that I may have an opportunity of examining.

## 2. On new and little-known Butterflies from India.

By Arthur G. Butler, F.L.S., F.Z.S., &c.

[Received February 17, 1880.]

(Plate XV.)

The following species were collected by Dr. Watt, Professor of Botany in the Calcutta University; some of them I enumerate for the sake of the notes on habits and date of appearance which accompany them, and others because they prove to be new to science.

### Nymphalidæ.

#### Satyrinæ, Bates.

1. Aulocera brahminus.

*Satyrus brahminus*, Blanchard, Jacquem. Voy. dans l'Inde, iv. Ins. p. 22. n. 18, pl. 2. fig. 4, ♂.

*Aulocera werang*, Lang, Ent. Month. Mag. iv. p. 247 (1868).

Ravee Basin, up to 6000 feet.

Mr. Moore kindly pointed out to me that the sexes figured by Blanchard are referable to distinct species, the male being the *A. werang* of Lang.

2. Hipparchia diffusa, n. sp.

♀. Closely allied to *H. semele*, from which it principally differs in the obscured and diffused character of the ochraceous patches enclosing the ocelli on the upper surface of the primaries; on the under surface the white belt is well marked, more so than in any specimens of *H. semele* which I have seen. Expanse of wings 2 inches 1 line.

Ravee Basin.

3. Erebia kalinda.

*Erebia kalinda*, Moore, Proc. Zool. Soc. 1865, p. 501. n. 92, pl. 30. fig. 5.

In pine-forests, Ravee Basin, up to 12,000 feet.

4. Callerebia hybrida.

Dr. Watt obtained a series of a *Callerebia* exhibiting intermediate forms between *C. annada* and *C. nirmala*. In the coloration of the

under surface of the primaries they agree almost entirely with *C. nirmala*, but show the submarginal stripe strongly as in *C. annada*; on the underside of the secondaries they are coloured like *C. annada*, but have rounded ocelli varying in number from two to five. In expanse they are intermediate, and therefore correspond with *C. scanda* in this respect.

N.W. Himalayas, up to 6000 feet.

5. Ypthima ordinata, n. sp. (Plate XV. fig. 3.)

Nearly allied to *Y. lisandra*, rather darker: primaries above with the ocellus less widely zoned; secondaries with three ocelli in an oblique decreasing series from third median branch to anal angle: wings below decidedly browner, the transverse stripes less prominent; secondaries with six ocelli forming a regular but interrupted series, two at apical angle and two on median interspaces of nearly equal size, and two smaller, unequal and confluent, at anal angle; all these ocelli have a single small plumbageous pupil. Expanse of wings 1 inch 5 lines.

One specimen. Bengal.

The ocelli on the under surface of secondaries in *Y. lisandra* form a distinctly irregular series, and are generally much less uniform in size.

Nymphalinæ, Bates.

6. Charaxes watti, n. sp. (Plate XV. fig. 2.)

♂. Allied to *C. baya* and *C. affinis* (see P. Z. S. 1865, pl. xxxvii.); but differing from the former in the absence of the white pupils in the black submarginal spots on the upper surface of secondaries; from the latter in the greater size and more distinctly diamond-like shape of these spots, and the much more regular inner margin of the broad black border of primaries; and from both in the coloration of the under surface, which is dull clay-yellowish washed with shining lilacine grey, excepting upon the outer borders and on the lunated discal belt bounding the submarginal ocelloid spots internally; bands indicated by black lines edged externally with white; margins and lunated belt dull ferruginous brownish. Expanse of wings 3 inches 6 lines.

Bishnath, Upper Assam, August 1877.

Only one example was taken; but Dr. Watt says that it is not uncommon.

7. Limenitis trivena.

*Limenitis trivena*, Moore, Ent. Month. Mag. i. p. 133, note (Nov. 1864).

Ravee Basin, N.W. Himalayas, on wooded slopes near water.

8. Neptis mahendra.

*Neptis mahendra*, Moore, Proc. Zool. Soc. 1872, p. 560, pl. 32. fig. 3.

Common in the Ravee Basin; one specimen also taken in the

Chundrabagha valley at 9000 feet elevation in wooded valleys; flying with a floating flight amongst trees near water.

9. Melitæa balbita.

*Melitæa balbita*, Moore, Proc. Zool. Soc. 1874, p. 268, pl. 43. fig. 5.

Northern slopes of N.W. Himalayas, Chundrabagha region.

## Lycænidæ.

Amongst the Lycænidæ Dr. Watt has obtained both sexes of *Lycæna ariana*, *Lampides dipora*, *Thecla syla*, *T. icana*, the female of *T. birapa* and *T. odata*; also examples of *Chrysophanus kasyapa*, *Deudorix selira*, *Ilerda androcles*, *I. tamu*, and *I. sena*. Of these, the most interesting is the female of *Thecla icana* of Moore, which is of a dark smoky brown above, with two bright ochreous spots placed obliquely beyond the discoidal cell of the primaries; it is rather larger than the male, measuring 1 inch 8 lines in expanse.

## Papilionidæ.

### Pierinæ, Bates.

10. Teracolus tripunctatus. (Plate XV. fig. 4.)

♂. *Idmais tripuncta*, Butler, Proc. Zool. Soc. 1868, p. 221, pl. 17. fig. 9.

♀. Above very like the female of *T. fulvia*, but only three cream-coloured spots on the apical area of primaries above, and the marginal spots of secondaries larger and confluent; one or two blackish dashes on the disk upon the subcostal and discoidal interspaces. Primaries below bright sulphur-yellow, washed with saffron upon the costa, apical area, and external border; the internal area white; discoidal stigma large and grey with black margin; seven spots across the disk, the first five ferruginous, the last two black, the third and fourth considerably more elongated than the others, the last placed further from the margin; seven marginal squamose blackish spots; fringe rose-red: secondaries bright saffron-yellow, washed upon outer border with rose-red; a small discoidal ocelloid spot and a discal series of seven spots in a subfalciform series, ferruginous: body below cream-coloured, sprinkled with saffron-yellow. Expanse of wings 2 inches.

Nilgherries, above 6000 feet; flying on grassy slopes near streams.

In the absence of specimens of this species in any available collection, it has been supposed to be no more than a slight variety of *T. fulvia* of Wallace; a comparison of the female above described with the type specimens of Wallace's species proves that I was fully justified in separating it as a perfectly distinct species, the coloration of the under surface in *T. fulvia* being creamy and consequently quite unlike *T. tripunctatus*. I have slightly altered the name so as to adopt the orthodox adjectival termination.

11. Teracolus farrinus, ♂.

*Teracolus farrinus*, Butler, Proc. Zool. Soc. 1876, p. 159. n. 112, pl. 7. fig. 2.

On the railway-embankment near Lahore.

Dr. Watt says that this species is not uncommon; he, however, only brought home one example, which he presented to the National collection.

12. Ixias agniverna.

*Ixias agniverna*, Moore, Ann. & Mag. Nat. Hist. ser. 4, vol. xx. p. 50 (1877).

Bengal.

Dr. Watt took this species in company with *I. mariannæ*.

13. Ixias dharmsalæ, n. sp. (Plate XV. figs. 8, 9.)

♂. Bright lemon-yellow: primaries above with the base tinted with greenish grey; costal margin and apical half (enclosing a broad orange belt, divided by black veins into eight areas) black; lower discocellular bounded internally by a nearly semicircular black spot, which is partially confluent with the inner border of the apical area, the latter reduced by the orange belt to a rather slender stripe: secondaries with a moderately broad, undulated, dark-brown outer border: body greenish, with the prothorax slightly reddish in front. Wings below of a less clear yellow than above, irrorated here and there with little brown mottlings; internal area whitish; a dark-brown spot on the angle of the discocellulars; veins terminating in black dots: primaries with an indistinct zigzag series of squamose brown spots on the disk from the costa to the third median branch; secondaries with a red-brown spot on costal area near apex and three others of different sizes on the inferior subcostal, radial, and third median interspaces. Expanse of wings 2 inches 4 lines.

♀. Bright sulphur-yellow: wings above with the black areas nearly as in the male, but the belt of primaries sulphur-yellow traversed by four transverse diffused black spots, the third of which is alone separated from the black veins and surrounding black area. Primaries below (excepting the apex, costa, and outer border, which are lemon-yellow, and the internal area, which is whitish) sulphur-yellow; veins at apex and outer margin orange; terminal black dots and discocellular spots nearly as in the male; a discal elbowed series of six spots, the three uppermost of which are ferruginous and the remainder blackish; a blackish squamose patch at external angle: secondaries more strongly mottled than in the male, with two additional small red-brown discal spots, thus forming a series of six, of which the first, third, and fourth are large and the three others small and decreasing in size from the costal area downwards: body paler than in the male. Expanse of wings 2 inches 3 lines.

Dharmsala, N.W. Himalayas, 7000 feet.

Mr. Moore has a series of this beautiful species in his collection.

14. Ixias frequens, n. sp. (Plate XV. figs. 6, 7.)

♂. Above very similar to the preceding, but the orange belt of primaries more regular in outline and slightly yellower, basal area darker; secondaries with a broader and internally diffused outer border: wings below clearer, not mottled, the apical area of primaries slightly dusted with grey scales; veins terminating in minute black dots, and similar dots on the angle of the discocellulars. Expanse of wings 2 inches 4 lines.

♀. Above bright lemon-yellow, the basal area heavily irrorated with grey and brown scales: primaries with the costal border and apical half black-brown, the latter crossed by a rather broad zigzag pale orange belt bordered with yellow and crossed by black veins, separated at the third median branch, below which it is crossed by two black spots, the lower one confluent with the blackish ground-colour: secondaries with broader outer border than in the male. Wings below altogether different: primaries sulphur-yellow, sprinkled, especially upon apical area, with brown scales; a large dark brown discocellular spot crossed by a yellow vein; a discal series of six spots, the three upper ones placed obliquely, pale brown with whitish pupils, the others black; a large blackish patch at external angle: secondaries pale sulphur-yellow, sparsely sprinkled on basal area with black scales; external area irrorated with brown; veins terminating in black dots; a small black spot on the angle of the discocellulars; a discal series of seven unequal spots in an arched series, pale reddish brown with white centres; venter white. Expanse of wings 2 inches 3 lines.

Bengal.

15. Ixias watti, n. sp. (Plate XV. fig. 1.)

Also allied to *I. dharmsalæ*, but the base more densely obscured by *blackish* scales; the orange belt narrower and of a deeper colour: secondaries with the outer border wider, diffused and broken up by yellow internervular folds into large spots; body blacker. Wings below sulphur-yellow, sparsely irrorated with blackish scales, with small black discocellular and marginal dots: primaries showing traces of the orange belt through the wing; two brown dots placed obliquely beyond it upon the subcostal interspaces: secondaries with a discal series of seven saffron-yellow spots in an arched line, the fourth largest. Expanse of wings 2 inches 5 lines.

Bengal.

The following species was taken by Dr. Watt during a recent excursion into Thibet:—

16. Euchloë venosa, n. sp. (Plate XV. fig. 5.)

♂. Allied to *E. daphalis*, which it much resembles above, excepting that it is considerably larger, has the apical area of primaries darker and the white spots consequently better defined, the discocellular spots decidedly larger and the markings of the under surface more distinctly visible through the secondaries. Below it is quite

different in colour: primaries snow-white with black dotted costa; a black reniform spot intersected by the lower discocellular veinlet, which is white; apical area dark olive-green spotted with white, as in *E. simplonia*: secondaries dull olive-green, with pale buff veins and silvery-white spots, and abbreviated irregular bands similar to those of *E. simplonia*. Expanse of wings 1 inch 10 lines.

♀. Differs from the male above in the darker apex of the primaries and the more distinctly visible under-surface markings upon the secondaries: below in the bright sap-green apical area of primaries and ground-colour of secondaries, and the bright orange colouring of the veins on the latter wings. Expanse of wings 1 inch 10 lines.

Western Thibet.

### Hesperiidæ.

17. Antigonus vasava.

*Achlyodes vasava*, Moore, Proc. Zool. Soc. 1865, p. 786.

Upper Assam, 19th March, 1877.

### EXPLANATION OF PLATE XV.

Fig. 1. *Ixias watti*, p. 151.
2. *Charaxes watti*, p. 148.
3. *Ypthina ordinata*, p. 148.
4. *Teracolus tripunctatus*, p. 149.
5. *Euchloë venosa*, p. 151.
6, 7. *Ixias frequens*, p. 151.
8, 9. *Ixias dharmsalæ*, p. 150.

## 3. Description of a new Species of Orthopteron of the Genus *Anostostoma* from Madagascar. By Arthur Gardiner Butler, F.L.S., F.Z.S.

[Received February 20, 1880.]

The following remarkable Orthopteron was obtained last year from a collection of insects made at Antananarivo by Mr. Kingdon.

Being a winged species, I should have supposed this insect to be referable to a genus distinct from *Anostostoma*, had not the experienced Orthopterist Herr Brunner von Wattenwyl kindly examined it for me and assured me that, although an aberrant form, it undoubtedly belonged to that group.

The species is readily distinguishable from the other described forms, not only by the possession of elytra and wings, but by many other particulars of structure, notably by the well-marked transverse crest upon the front of the face and just above the insertion of the mandibles.

Anostostoma alatum, n. sp.

Length from vertex of head to extremity of abdomen 29 millims.; from vertex to extremity of labrum 16 millims.

*Male*. Greenish brown, becoming darker when dry; face, mandibles, margins of prothorax, and knees blackish piceous.

*Head* large (but apparently not so much so as in *A. cuniculator*),